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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,310	01/05/2005	Martinus Bernardus Van Der Mark	NL020666US	2500

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EXAMINER	
HEYI, HENOK G	

ART UNIT	PAPER NUMBER
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,310	VAN DER MARK ET AL.	
	Examiner	Art Unit	
	HENOK G. HEYI	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-10 and 12-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-10 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 03/10/2009 have been fully considered but they are not persuasive. Applicant argues that Novotny in view of Higuchi does not disclose or suggest that at least one of the recording stack has deposited a transparent hydrophobic layer on a surface of the first recording stack or the second optical surface has deposited a transparent hydrophobic layer on a surface of the second optical surface remote from the focused radiation beam, wherein the transparent hydrophobic layer extends substantially in a direction of an optical surface on which the transparent hydrophobic layer is deposited. However, Higuchi teaches the moisture barrier layer 5 is provided to prevent the substrate 1 from absorbing moisture. Specifically, when the substrate 1 expands with absorbing moisture, a stress imbalance arises between the substrate 1 and a plurality of the layers 2, 3 and 4 provided on the substrate 1 (col 3 lines 28-33). The moisture barrier is provided not only around the substrate but also around the other recording stack surfaces Higuchi also teaches that the layer thickness is dependent on the refractive index n and the wavelength λ (col 4 lines 35-47).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2-4, 6-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novotny et al. 6,069,853 (Novotny hereinafter) in view of Higuchi et al. 5,311,500 (Higuchi hereinafter).

Regarding claim 12, Novotny teaches an optical recording and reading system (see Fig. 1), the system comprising: a laser configured to provide a focused radiation beam (optical head is configured to produce a lensing effect and thereby to focus the beam to the recording layer, col 3 lines 33-36); an optical data storage medium comprising (150, Fig. 5A): a substrate (the substrate is formed of a plastic layer, col 5 lines 60-63), and a first recording stack formed on the substrate having a first optical surface remote from the substrate, wherein the first recording stack is configured for recording by the focused radiation beam (layers on 150, Fig. 1); and an optical head (140, Fig. 1), with an objective arranged on a first recording stack side of the optical data storage medium and having a second optical surface closest to the recording stack, from which objective the focused radiation beam emanates during recording (142, Fig. 1), but Novotny fails to teach at least one of the first recording stack has deposited a transparent hydrophobic layer on a surface of the first recording stack or the second optical surface has deposited a transparent hydrophobic layer on a surface of the second optical surface remote from the focused radiation beam, wherein the transparent hydrophobic layer is deposited to extend substantially in a direction of the first optical surface. However, Higuchi teaches a moisture barrier by the side of each layer in the medium as shown in Fig. 2.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the recording medium of Novotny to include a moisture barrier deposit. The modification would have been obvious because of the benefit of the moisture barrier in keeping the substrate and other layers of the recording medium from crack that would have been caused by moisture (see Higuchi col 3 lines 28-33).

Regarding claim 2, Higuchi teaches the system according to claim 12, wherein the second optical surface has deposited the hydrophobic layer with a thickness substantially equal to 0.25 λ /n (col 4 lines 35-47).

Regarding claim 3, Higuchi teaches the system according to claim 12, wherein the second optical surface has deposited a hydrophylic layer (5, see col 3 lines 25-30) on a surface of the second optical surface remote from the focused radiation beam that has a thickness substantially equal to 0.25 λ/n(col 4 lines 35-47).

Regarding claim 4, Novotny teaches the system according to claim 12, wherein the optical head (140, Fig. 5A) further comprises a magnetic coil (604, Fig. 6A) arranged at a side of the optical head (140) closest to the recording stack (152, Fig. 1) such that an optical axis of the optical head (140) traverses the center of the magnetic coil (604) and the recording stack (152) of the optical data storage medium (150) is of the magneto-optical type.

Regarding claim 6, Higuchi teaches a system according to any one of claims 12 and 2-5, wherein the hydrophobic layer (moisture barrier, col 3 lines 28-33) comprises a material selected from the group of poly-para-xylylenes, fluorocarbons and copolymers of fluorocarbons (col 3, lines 24-60).

Regarding claim 7, Higuchi teaches the system according to any one of claims 4-5, wherein the focused radiation beam has a wavelength λ, wherein the transparent hydrophobic laver has a refractive index n, and wherein the magnetic coil is contained in a partially transparent slider, that is adapted for flying at a distance of>0.5 λ /n and 2μm from the first optical surface (col 4 lines 35-50).

Regarding claim 8, Novotny teaches an optical data storage medium (150, Fig. 1) having a recording stack (152), formed on a substrate (160), said recording stack suitable for recording by means of a focused radiation beam (see Fig. 1), with a wavelength λ in air (a beam at a specified wavelength, col 3 line 17), but fails to teach explicitly about the recording stack having a first optical surface most remote from the substrate, characterized in that the first optical surface (6) is provided with a transparent hydrophobic layer (10) that has a refractive index n and has a thickness smaller than 0.5 λ/n, wherein the transparent hydrophobic layer is deposited on a surface of the recording stack and extends substantially in a direction of the recording stack. However, Higuchi teaches the moisture barrier layer 5 is provided to prevent the substrate 1 from absorbing moisture. Specifically, when the substrate 1 expands with absorbing moisture, a stress imbalance arises between the substrate 1 and a plurality of the layers 2, 3 and 4 provided on the substrate 1 (col 3 lines 28-33). Higuchi also teaches that the layer thickness is dependent on the refractive index n and the wavelength λ (col 4 lines 35-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical recording and reading system of Novotny to include a

data storage medium that has hydrophobic (moisture barrier) layers with thickness that depend on the wavelength and refractive index. The modification would have been obvious because of the benefit of avoiding contamination of lens due to moisture and other contaminants.

Regarding claim 9, Higuchi teaches the optical data storage medium according to claim 8, wherein the hydrophobic layer that has a thickness smaller than 0.25 λ /n (col 4 lines 35-47).

Regarding claim 10, Higuchi teaches the optical data storage medium according to claim 8 or 9, wherein the hydrophobic layer comprises a material selected from the group of poly-para-xylylenes, fluorocarbons and copolymers thereof (col 3, lines 24-60).

Regarding claim 13, Novotny teaches the system according to claim 12, wherein the objective is adapted for recording/reading at a free working distance from the first optical surface smaller than 50μm (configured to operate in a "near-field" configuration where the optical head and the optical medium are spaced from each other by a distance on the order of or less than one wavelength, col 1 lines 34-49).

Regarding claim 14, Higuchi teaches a method of manufacturing an optical data storage medium (col 3 lines 24-col 5 line 10), the method comprising acts of: providing a substrate (1); depositing a recording stack on the substrate (2, 3 and 4), wherein the recording stack is suitable for recording by a focused radiation beam with a wavelength in air, depositing a transparent hydrophobic layer on an optical surface of the recording stack most remote from the substrate, wherein the hydrophobic layer has a

refractive index n and has a thickness smaller than 0.5 λ /n, wherein the transparent hydrophobic layer is deposited to extend substantially in a direction of the recording stack (a moisture barrier layer 5a of the same type as that described above is provided on the outer surface of the substrate 1, on all of the edge faces of the substrate 1, on all of the edge faces of a plurality of the layer 2, 3 and 4 provided on the substrate 1, and on the outer surface of the second dielectric layer 4, col 4 lines 58-65).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Novotny et al. 6,069,853 (Novotny hereinafter) in view of Higuchi et al. 5,311,500 (Higuchi hereinafter) as applied to claim 4 above, and further in view of Davis et al. 6,058,094 (Davis hereinafter).

Regarding claim 5, Novotny teaches a system according to claim 4, with a magnetic coil (604, Fig. 6A) but both Novotny and Higuchi fail to teach the size of the inner diameter of the magnetic coil is smaller than 60μm. However, Davis teaches that the inner diameter along the major axis of the magnetic coil 460 on a lower surface comprises approximately 46 microns and along the minor axis approximately 40 microns. (Col 10 lines 31-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the magnetic coil of Novotny to have a diameter smaller than 60μm as taught by Davis. The modification would have been obvious because of the benefit of strong magnetic field.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENOK G. HEYI whose telephone number is (571)270-1816. The examiner can normally be reached on Monday to Friday 8:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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